

**SMDH10C120K****1200V,10A SIC SCHOTTKY BARRIER DIODE****FEATURE**

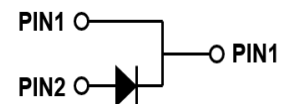
- . 1200V Schottky Diode,100% avalanche tested*
- . Zero Reverse Recovery/Zero Forward Recovery
- . High Efficiency Operation
- . Extremely Fast Switching
- . Temperature Independent Switching Behavior

TYPICAL APPLICATIONS

- . Switch mode power supply
- . Power factor correction Solar Invertor
- . Solar inverter
- . Uninterruptible power supply



TO-220AD-2L



*20% rating current,5 mH inductance.

MAXIMUM RATINGS ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	1200	V
DC peak blocking Voltage	V_{DC}	1200	V
Maximum Average Forward Rectified Current at $T_C=150^{\circ}\text{C}$	$I_{F(AV)}$	10	A
Non-Repetitive Peak Forward Surge Current $T_C=25^{\circ}\text{C}$, $t_p=10$ ms, Half Sine Pulse	I_{FSM}	80	A
Total power dissipation $T_C=25^{\circ}\text{C}$	P_D	166	W
Operation Junction Temperature and Storage Temperature	T_J, T_{STG}	-40 to +175	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Min	Typ	Max	Units
DC blocking voltage	$I_R = 250\mu\text{A}, T_j = 25^{\circ}\text{C}$	V_{DC}	1200		V
Forward voltage	$I_F=10\text{A}, T_j=25^{\circ}\text{C}$	V_F	1.4	1.75	V
	$I_F=10\text{A}, T_j=175^{\circ}\text{C}$		2.0		
Reverse current	$V_R=1200\text{V}, T_j=25^{\circ}\text{C}$	I_R	0.7	40	μA
	$V_R=1200\text{V}, T_j=175^{\circ}\text{C}$		10		
Total capacitive charge	$V_R = 800\text{V}$	Q_C	44	---	nC
Total capacitance	$V_R=0\text{V}, T_j=25^{\circ}\text{C}, f=1\text{MHZ}$	C	656	---	pF
	$V_R=400\text{V}, T_j=25^{\circ}\text{C}, f=1\text{MHZ}$		45	---	
	$V_R=800\text{V}, T_j=25^{\circ}\text{C}, f=1\text{MHZ}$		31	---	

THERMAL CHARACTERISTICS ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Typ	Max	Units
Typical Thermal Resistance Junction to Case	$R_{(JC)}$	0.9	---	$^{\circ}\text{C/W}$



RATING AND CHARACTERISTIC CURVES

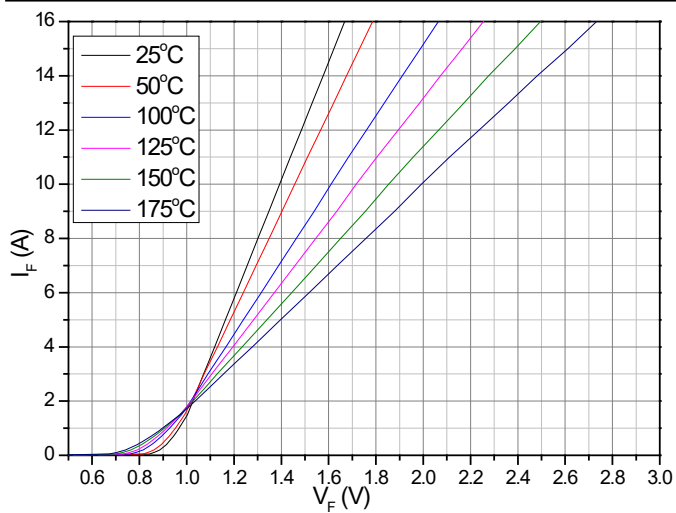


Figure 1. Forward Characteristics

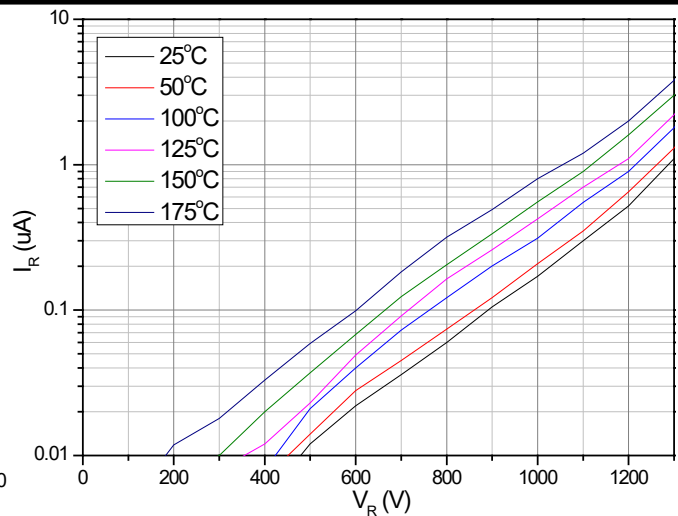


Figure 2. Reverse Characteristics

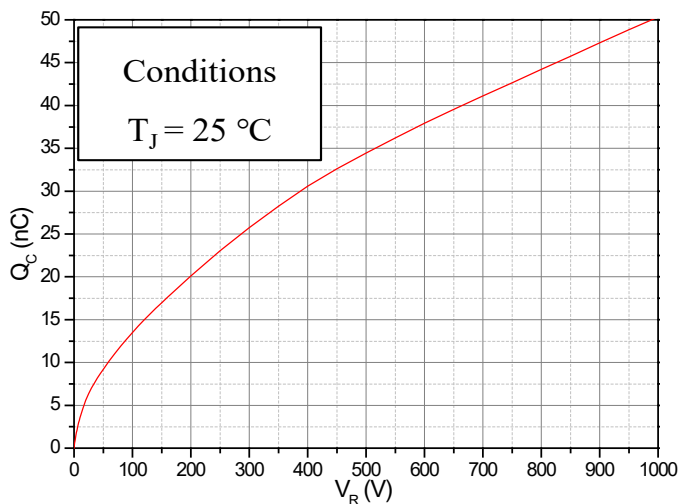


Figure 3. Total Capacitance Charge vs. Reverse Voltage

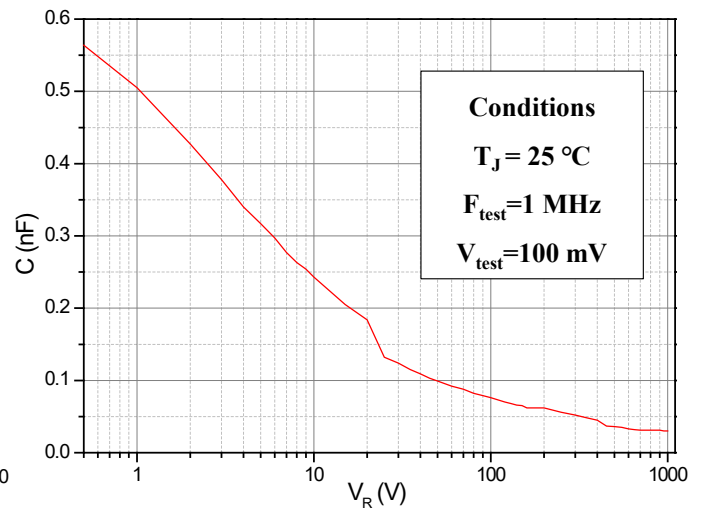
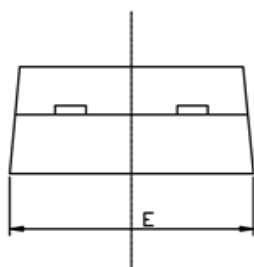
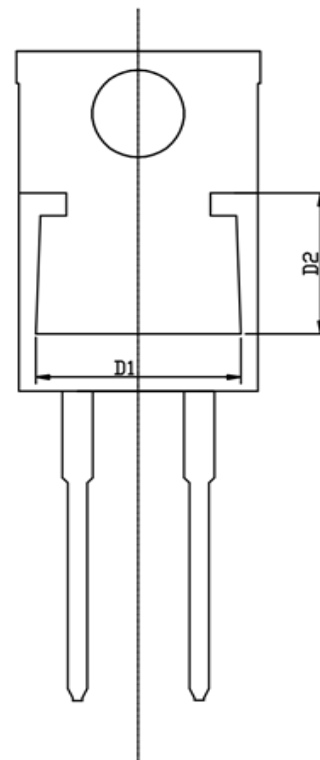
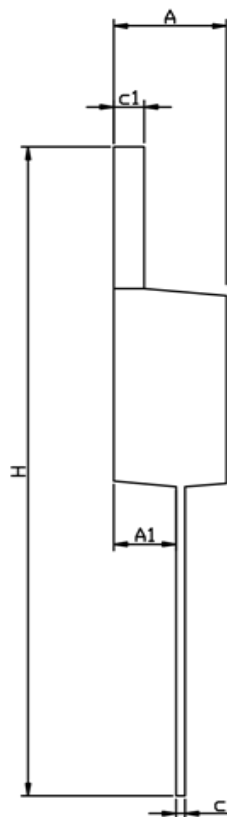
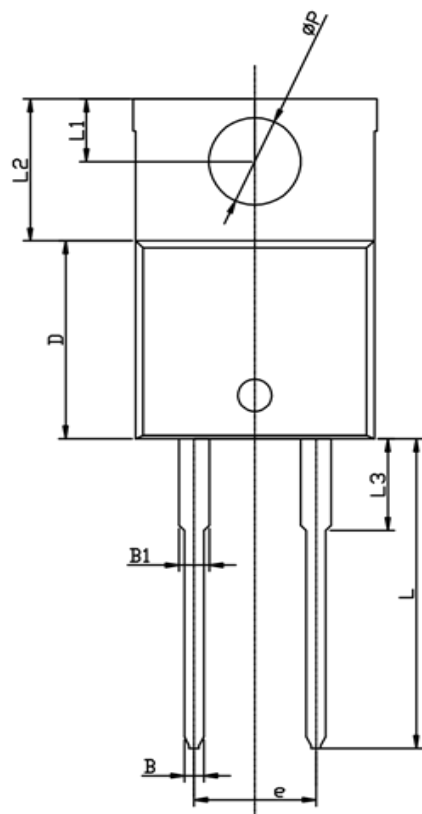


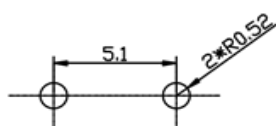
Figure 4. Capacitance vs. Reverse Voltage



TO-220AD-2L PACKAGE OUTLINE



RECOMMENDED LAND PATTERN



UNIT: mm

	MIN	NOM	MAX
A	4.50	4.70	4.90
A1	2.45	2.60	2.70
B	0.72	0.82	0.92
B1	1.12	1.27	1.42
c	0.28	0.38	0.48
c1	1.17	1.27	1.37
D	8.46	8.66	8.86
D1	7.70	7.90	8.40
D2	5.00	5.20	5.40
e		5.10	
E	9.85	10.15	10.45
H	28.00	28.50	29.00
ΦP		3.84	
L	13.1	13.6	14.1
L1	2.54	2.74	2.94
L2	6.04	6.24	6.44
L3	3.85	4.05	4.35